Supplementary Materials: Identification of Factors Influencing Locations of Tree Cover Loss and Gain and their Spatio-Temporally-Variant Importance in the Li River Basin, China. *Remote Sens.* 2016, *8*, 201.

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Table S1. The path/row number, acquisition time, sensor and processing level of each Landsat scene.

Year	Path/Row	Acquisition Time (Year/Month/Day)	Sensor	Processing Level
1991	124/42	30 October 1991	Landsat 5 TM	Level 1G
	124/43	30 October 1991		
	125/42	13 September 1989		
	125/43	5 October 1991		
2002	124/42	12 October 2002	Landsat 5 TM	Level 1T
	124/43	12 October 2002		
	125/42	1 September 2002		
	125/43	11 October 2002	Landsat 7 ETM+	
2013	124/42	26 October 2013	Landsat 8 OLI	
	124/43	26 October 2013		
	125/42	4 December 2013		
	125/43	4 December 2013		

Table S2. The confusion matrices for accuracy assessment of the six land cover classification images [a].

1991					
Actual Class / Classification	Forest	Water	Urban	Unclassified	User's Accuracy
Forest	199	2	2	19	89.64%
Water	0	15	0	0	100%
Urban	3	4	53	3	84.13%
Unclassified	6	2	2	62	86.11%
Producer's Accuracy	95.67%	65.22%	92.98%	73.81%	88.44%
2002					
Actual Class / Classification	Forest	Water	Urban	Unclassified	User's Accuracy
Forest	187	4	0	17	89.90%
Water	0	12	0	0	100%
Urban	0	2	36	6	81.82%
Unclassified	4	0	4	54	87.10%
Producer's Accuracy	97.91%	66.67%	90%	70.13%	88.65%

Table S2. *Cont.*

2013					
Actual Class / Classification	Forest	Water	Urban	Unclassified	User's Accuracy
Forest	272	0	0	12	95.77%
Water	0	13	0	0	100%
Urban	4	4	94	20	77.05%
Unclassified	10	0	10	100	83.33%
Producer's Accuracy	95.10%	76.47%	90.38%	75.76%	88.87%

[a] For the 2013 land cover classification image, 69 points were validated via ground truthing, and 470 were validated via photointerpretation of Google Earth images. For the 1991 and 2002 land cover classification images, 372 and 326 points were validated via the county-level land use maps, field interviews, yearbooks and historical documents.

Table S3. Standardized variable importance and the Out-of-bag (OOB) errors of tree cover loss models. Variable importance was quantified by the mean decrease in accuracy. The OOB errors were achieved with the set of important factors. The background of important factors was colored in grey, and the three most important factors were marked in bold.

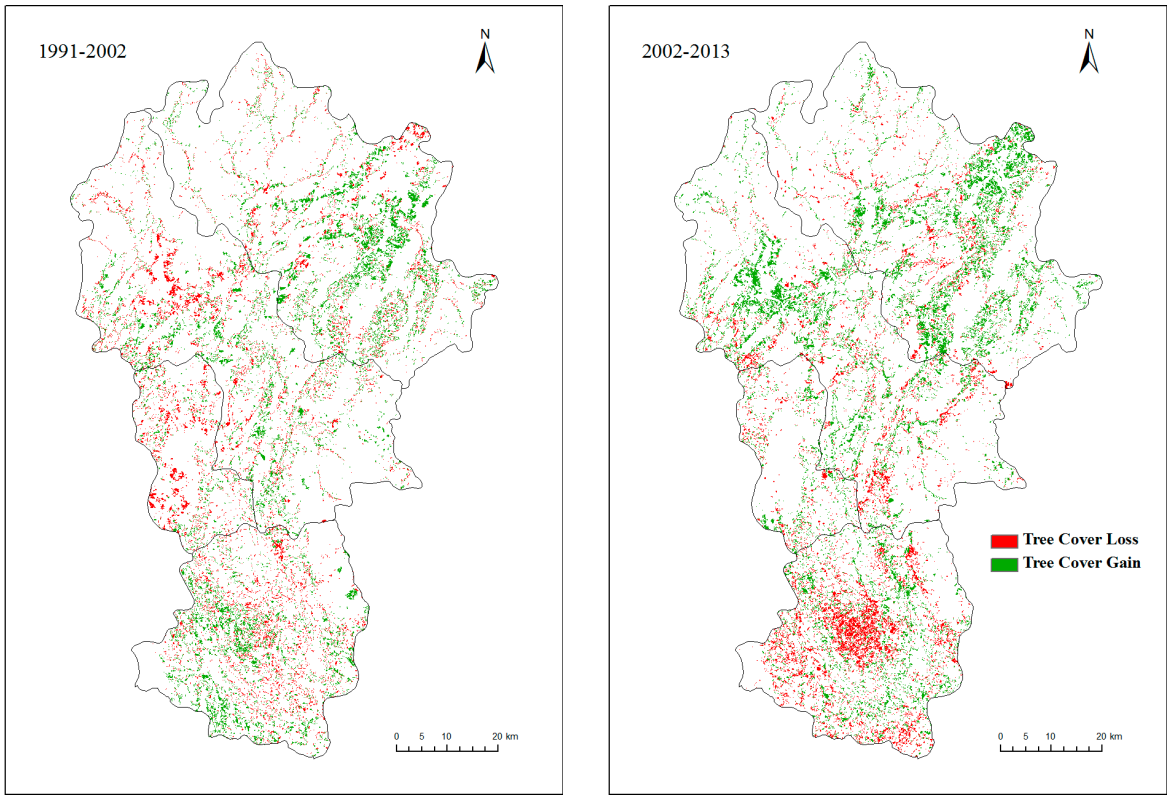
Factors	Pooled	GL	YS	XA	LC	1991–2002	2002–2013
Init_LC_MAJ	0.00	0.00	0.01	0.01	0.00	0.00	0.01
Init_LC_VAR	0.00	0.01	0.01	0.01	0.01	0.00	0.01
Init_LC_CS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Init_LC_HTG	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Init_DIS_WT	0.00	0.00	0.01	0.01	0.00	0.00	0.01
Init_DIS_UB	0.01	0.01	0.04	0.03	0.01	0.01	0.01
Init_DIS_OT	0.01	0.00	0.02	0.00	0.01	0.00	0.01
Init_ED	0.00	0.00	0.01	0.01	0.01	0.00	0.01
Init_PL_TC	0.01	0.00	0.03	0.01	0.00	0.00	0.01
Init_PL_WT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Init_PL_UB	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Init_PL_OT	0.00	0.01	0.02	0.01	0.00	0.00	0.01
ELEV	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
SLOPE	0.28	0.15	0.46	0.45	0.27	0.26	0.39
ASPECT	0.01	0.03	0.01	0.01	0.01	0.01	0.02
GEOM	**0.53**	**0.26**	**0.71**	**0.97**	**0.47**	**0.42**	**0.91**
SOIL	0.22	0.01	**0.46**	0.22	0.08	0.18	0.31
TEMP_MEAN	**0.44**	**0.27**	0.25	**0.48**	**0.39**	**0.33**	**0.72**
TEMP_STD	0.07	0.11	0.28	0.18	0.13	0.07	0.19
PRCP_MEAN	0.08	0.05	0.14	0.06	0.04	0.05	0.21
PRCP_STD	0.15	0.08	0.11	0.11	0.07	0.06	0.39
DIS_RD	0.13	0.03	0.13	0.33	0.08	0.15	0.15
DIS_NRD	0.08	0.09	0.22	0.08	0.06	0.05	0.12
DIS_PRD	0.07	0.05	0.15	0.09	0.03	0.03	0.15
DIS_CRD	0.09	0.03	0.07	0.21	0.07	0.06	0.10
DIS_HW	0.10	0.03	0.11	0.09	0.07	0.07	0.18
DIS_RAIL	0.07	0.04	0.17	0.14	0.04	0.04	0.18
DIS_PTS	0.13	0.02	0.10	0.07	0.10	0.06	0.31
DIS_ATTRC	0.06	0.01	0.09	0.08	0.08	0.04	0.12
DIS_ST	0.05	0.04	0.09	0.09	0.07	0.09	0.05

Table S2. *Cont.*

Factors	Pooled	GL	YS	XA	LC	1991–2002	2002–2013
ST_DEN	0.10	0.03	0.23	0.18	0.12	0.11	0.18
RD_DEN	0.07	0.02	0.13	0.11	0.13	0.09	0.10
Out-of-bag (OOB) errors (%)	22.43	22.14	22.31	22.37	22.23	21.98	22.47
Number of important factors	13	22	19	17	12	26	12

Table S4. Standardized variable importance and the Out-of-bag (OOB) errors of tree cover gain models. Variable importance was quantified by the mean decrease in accuracy. The OOB errors were achieved with the set of important factors. The background of important factors was colored in grey, and the three most important factors were marked in bold.

Factors	Pooled	GL	YS	XA	LC	1991–2002	2002–2013
Init_LC	0.30	0.02	0.20	0.27	**0.45**	0.08	**0.72**
Init_LC_MAJ	0.00	0.00	0.02	0.00	0.01	0.01	0.01
Init_LC_VAR	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Init_LC_CS	0.00	0.00	0.01	0.00	0.01	0.00	0.00
Init_LC_HTG	0.00	0.00	0.01	0.01	0.01	0.00	0.00
Init_DIS_TC	0.01	0.01	0.02	0.01	0.01	0.00	0.01
Init_DIS_WT	0.01	0.01	0.06	0.02	0.02	0.00	0.02
Init_DIS_UB	0.05	0.01	0.06	0.10	0.04	0.00	0.02
Init_DIS_OT	0.00	0.02	0.00	0.01	0.01	0.00	0.01
Init_ED	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Init_PL_TC	0.01	0.00	0.01	0.01	0.01	0.01	0.01
Init_PL_WT	0.00	0.00	0.01	0.01	0.01	0.00	0.00
Init_PL_UB	0.01	0.00	0.02	0.01	0.01	0.00	0.01
Init_PL_OT	0.00	0.00	0.02	0.01	0.00	0.01	0.00
ELEV	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
SLOPE	0.26	0.22	**0.41**	**0.39**	0.23	0.32	0.26
ASPECT	0.00	0.00	0.01	0.00	0.00	0.01	0.01
GEOM	**0.66**	**0.52**	**0.87**	**0.63**	**0.82**	**0.51**	**0.74**
SOIL	0.13	0.08	0.12	0.10	0.28	0.12	0.19
TEMP_MEAN	**0.39**	**0.35**	0.29	0.35	0.42	**0.32**	0.65
TEMP_STD	0.10	0.07	0.20	0.23	0.15	0.15	0.14
PRCP_MEAN	0.12	0.07	0.06	0.08	0.10	0.10	0.25
PRCP_STD	0.14	0.10	0.07	0.06	0.10	0.11	0.29
DIS_RD	0.05	0.00	0.03	0.08	0.08	0.02	0.09
DIS_NRD	0.15	0.09	0.04	0.20	0.15	0.12	0.26
DIS_PRD	0.08	0.08	0.19	0.11	0.08	0.06	0.13
DIS_CRD	0.03	0.01	0.03	0.05	0.09	0.02	0.07
DIS_HW	0.13	0.03	0.05	0.17	0.20	0.11	0.37
DIS_RAIL	0.09	0.11	0.08	0.12	0.21	0.09	0.13
DIS_PTS	0.08	0.12	0.13	0.08	0.16	0.10	0.12
DIS_ATTRC	0.16	0.02	0.03	0.10	0.12	0.08	0.37
DIS_ST	0.08	0.02	0.03	0.15	0.14	0.04	0.15
ST_DEN	0.06	0.02	0.07	0.10	0.11	0.05	0.08
RD_DEN	0.14	0.02	0.05	0.05	0.26	0.17	0.25
Out-of-bag (OOB) errors (%)	28.22	27.93	28.14	28.29	28.35	28.04	28.25
Number of important factors	17	23	19	20	29	28	33



(**a**) (**b**)

Figure S1. Area of tree cover loss and gain within the LRB for the periods of 1991 through 2002 (**a**); and 2002 through 2013 (**b**).